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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 08/726,613 | 10/07/1996 | JAMES M. MORI | 50184 | 9323 |

21874 7590 10/21/2003
EDWARDS & ANGELL, LLP
P.O. BOX 9169
BOSTON, MA 02209

EXAMINER

CHU, JOHN S Y

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| ART UNIT | PAPER NUMBER |
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1752

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/726,613

Applicant(s)

DOCANTO ET AL.

Examiner

John S. Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-15,18-20, 22-27, 47-82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 79-82 is/are allowed.
- 6) ☒ Claim(s) 1,4-14,18-20,22-26 and 47-78 is/are rejected.
- 7) ☒ Claim(s) 15 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to the RCE filed July 23, 2003 with the declaration under Rule 131.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1, 4-9, 18-20, 22-26, 47-69 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by JAGANNATHAN ET AL.

The claimed invention is drawn to a photoresist composition, an article of manufacture and a method of forming a photoresist image.

Claim 1 recites a photoresist composition comprising a polymer binder, a photoactive component and a dye compound that contains anthracene groups, said dye being a polymer wherein the polymer has a weight average molecular weight of at least about 5, 000.

Claim 16 recites a composition similar to claim 1 used in a method of forming a photoresist relief image, wherein the composition is coated on a substrate exposed and developed.

Claim 10 recites photoresist composition comprising a resin binder, a photoactive component, and a polymer dye that contains one or more polycyclic chromophores, said

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chromophores being selected from the group consisting of phenanthryl, acridine, quinolinyl and ring substituted quinolinyl.

Claim 70 recites a composition similar to claim 1 used in a method of forming a photoresist relief image, wherein the composition is coated on a substrate exposed and developed.

Claim 20 recites an article of manufacture comprising a substrate that is an integrated circuit substrate or a flat panel display having coated thereon a photoresist composition comprising a resin binder, a photoactive component and a polymeric dye that contains one or more polycyclic chromophores, said dye compound being a polymer wherein the polymer has a weight average molecular weight of at least about 5, 000.

Claim 22 recites a photoresist composition comprising a resin binder, a photoacid generator compound and a polymeric dye that contains one or more polycyclic chromophores, said dye compound being a polymer wherein the polymer has a weight average molecular weight of at least about 5,000.

Claim 50 recites a method using the compositions as recited in claims 20 and 22.

Claim 18 recites an article of manufacture comprising a polymer binder, a photoactive component and a dye that contains anthracene groups, said dye compound being a polymer wherein the polymer has a weight average molecular weight of at least about 5,000.

JAGANNATHAN ET AL discloses a polymer-bound sensitizer, which anticipates the claimed invention in column 5, Examples 4-8. The compositions in JAGANNATHAN ET AL recite the use of anthracene as one of several chromophores for the polymer-bound sensitizer, see column 3, lines 25-37 for the additional sensitizers suitable for the composition.

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The JAGANNATAN reference is a U.S. patent or U.S. patent application publication of a pending or patented application that claims the rejected invention. An affidavit or declaration is inappropriate under 37 CFR 1.131(a) when the reference is claiming the same patentable invention, see MPEP § 2306. If the reference and this application are not commonly owned, the reference can only be overcome by establishing priority of invention through interference proceedings. See MPEP Chapter 2300 for information on initiating interference proceedings. If the reference and this application are commonly owned, the patent may be disqualified as prior art by an affidavit or declaration under 37 CFR 1.130. See MPEP § 718.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-14, 18-20, 22-26, and 47-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over JAGANNATHAN ET AL

The claimed invention has been recited above and is included by reference.

JAGANNATHAN ET AL has been discussed for the disclosure of the photoresist composition having a polymer-bound sensitizer, which anticipates the claimed invention.

JAGANNATHAN ET AL lacks the explicit disclosure for the use of phenanthryl as recited in claims 10 and 70, however the use of isomeric compounds as alternative choices is conventional to the art, such that it is *prima facie* obvious to the skilled artisan to use isomers of

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anthracenyl, such as phenanthryl and reasonably expect the same or similar results for deep UV absorption in a photoresist composition. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (703) 308-2298. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

Motivation is based on the desire to have a photoresist composition, which is sensitive to the deep UV part of the spectrum without the sublimation of the sensitizer.

The arguments by applicant have been carefully considered, however the examiner restates the rejection wherein the isomeric compounds are seen as obvious over one another and thus phenanthryl can be seen as obvious over anthracene unless shown to be different by applicant.

The JAGANNATAN reference is a U.S. patent or U.S. patent application publication of a pending or patented application that claims the rejected invention. An affidavit or declaration is inappropriate under 37 CFR 1.131(a) when the reference is claiming the same patentable invention, see MPEP § 2306. If the reference and this application are not commonly owned, the reference can only be overcome by establishing priority of invention through interference proceedings. See MPEP Chapter 2300 for information on initiating interference proceedings. If the reference and this application are commonly owned, the patent may be disqualified as prior art by an affidavit or declaration under 37 CFR 1.130. See MPEP § 718.

5. Claims 15 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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None of the prior art references disclose the specified chromophore as recited in claims 15 and 17.

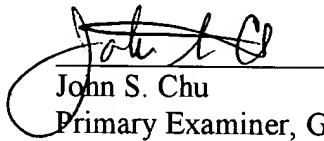
6. Claims 79-82 are allowed.

None of the prior art references of record disclose the claimed polymer dye compound as seen in claim 79. Rule 1.126 states that the "When claims are added, they must be numbered by the applicant consecutively beginning with the number next following the highest numbered claim previously presented...". New claims 80-83 as added by applicant have been renumbered as claims 79-82 per Rule 1.126.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (703) 308-2298. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for this Group is (703) 305-5433.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.


John S. Chu
Primary Examiner, Group 1700

J.Chu
October 20, 2003